

Assumptions to the Annual Energy Outlook 2009

Table 5.6. Capital Cost and Efficiency Ratings of Selected Commercial Space Heating Equipment¹

Equipment Type	Vintage	Efficiency ²	Capital Cost (\$2007 per Mbtu/hour) ³	Maintenance Cost (\$2007 per Mbtu/hour) ³	Service Life (Years)
Electric Rooftop Heat Pump	2007- typical	3.2	\$72.78	\$1.39	15
	2007- high efficiency	3.4	\$96.67	\$1.39	15
	2010 - typical (standard)	3.3	\$76.67	\$1.39	15
	2010 - high efficiency	3.4	\$96.67	\$1.39	15
	2020 - typical	3.3	\$76.67	\$1.39	15
	2020 - high efficiency	3.4	\$96.67	\$1.39	15
Ground-Source Heat Pump	2007- typical	3.5	\$140.00	\$16.80	20
	2007- high efficiency	4.9	\$170.00	\$16.80	20
	2010- typical	3.5	\$140.00	\$16.80	20
	2010 - high efficiency	4.9	\$170.00	\$16.80	20
	2020 - typical	4.0	\$140.00	\$16.80	20
	2020 - high efficiency	4.9	\$170.00	\$16.80	20
Electric Boiler	Current typical	0.98	\$17.53	\$0.58	21
Packaged Electric	Typical	0.96	\$16.87	\$3.95	18
Natural Gas Furnace	Current Standard	0.80	\$9.35	\$0.97	20
	2007 - high efficiency	0.82	\$9.90	\$0.94	20
	2020 - typical	0.81	\$9.23	\$0.96	20
	2020 - high efficiency	0.90	\$11.57	\$0.86	20
	2030 - typical	0.82	\$9.12	\$0.94	20
	2030 - high efficiency	0.91	\$11.44	\$0.85	20
Natural Gas Boiler	Current Standard	0.80	\$22.42	\$0.50	25
	2007 - mid efficiency	0.85	\$25.57	\$0.47	25
	2007 - high efficiency	0.96	\$39.96	\$0.52	25
	2020 - typical	0.82	\$21.84	\$0.49	25
Natural Gas Heat Pump	2007 - absorption	1.4	\$158.33	\$2.50	15
	2010 - absorption	1.4	\$158.33	\$2.50	15
	2020 - absorption	1.4	\$158.33	\$2.50	15
Distillate Oil Furnace	Current Standard	0.81	\$11.14	\$0.96	20
	2020 - typical	0.81	\$11.14	\$0.96	20
Distillate Oil Boiler	Current Standard	0.83	\$17.63	\$0.15	20
	2007 - high efficiency	0.89	\$19.84	\$0.14	20
	2020 - typical	0.83	\$17.63	\$0.15	20

¹Equipment listed is for the New England Census division, but is also representative of the technology data for the rest of the U.S. See the source referenced below for the complete set of technology data.

²Efficiency measurements vary by equipment type. Electric rooftop air-source heat pumps, ground source and natural gas heat pumps are rated for heating performance using coefficient of performance; natural gas and distillate furnaces are based on Thermal Efficiency; and boilers are based on combustion efficiency.

³Capital and maintenance costs are given in 2007 dollars.

Source: Energy Information Administration, "EIA - Technology Forecast Updates - Residential and Commercial Building Technologies - Reference Case Second Edition (Revised)", Navigant Consulting, Inc., Reference Number 20070831.1, September 2007.

